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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,182	05/22/2002	Takuo Sakai	0397-0441P	7643

2292 7590 06/29/2005

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EXAMINER

WARE, DEBORAH K

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,182

Applicant(s)

TAKUO SAKAI

Examiner

Deborah K. Ware

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1 and 3-9 are presented for examination on the merits.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on November 22, 2004, has been entered.

Drawings

The drawings filed May 22, 2002 are acceptable to the examiner.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Papers

The Preliminary Amendments filed March 24, 2005 and May 3, 2005, have been received and entered. The declaration filed May 3, 2005, under 37 CFR 1.132 has been received and is considered below.

Response to Applicants' Remarks

Applicant's arguments and declaration filed March 24, 2005 and May 3, 2005, have been fully considered and are persuasive with respect to the 35 USC 102 rejection and prior 35 USC 103 rejection and prior rejections have been removed. The text of

those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1 and 3-9 remain rejected under 35 U.S.C. 103(a) as being unpatentable over WO '135 or US '382, both in view of Sakai et al, and EP 0 880 894 A1, all previously cited of record, and newly cited Sato et al (US Patent No. 5,958,419) newly cited of record on enclosed PTO-892 Form.

Claims are drawn to a process of producing an antibacterial substance and the substance contained in a composition prepared or derived from a plant. The plant can be optionally a chrysanthemum. Claims drawn to the composition of which can be used for food such as a drink.

WO 01/07135 teaches a process of producing an antibacterial substance and the substance contained in a composition prepared or derived from a plant. The plant can be chrysanthemum. See the abstract and pages 1-5, all lines (note entire document).

US Patent No. '382 discloses the same. Note entire document and col. 1-4, all lines and examples 1-2, all lines.

Sakai teaches protopectinases which release pectin in plants (sugar beet pulp). Note page 879, all lines and the abstract.

EP -894 teaches a bacteriocide produced from a plant (Stevia), for use against food borne bacteria. See column 1, lines 25-35 and column 2, lines 10-15.

Newly cited Sato et al teach that plant tissue of Stevia has yeast that exists in the plant tissue and when Stevia is stored in a container (i.e. food container) spores of

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yeast existing in the plant tissue germinate and ferment to fill the container with carbon dioxide, see column 2, lines 60-65.

The claims differ from the cited WO and US Patents in that the enzyme is not disclosed and the bactericide of the composition is newly required to inhibit germination of spores from spore-forming bacteria and koji mold.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to replace the solvent extraction disclosed by the WO and US Patents for the enzyme extraction disclosed by Sakai et al in order to carry out the process of producing an antibacterial substance derived from a plant; and to further provide for a bactericide composition that inhibits germination of spores from spore forming bacteria and koji mold because EP-894 teaches such bactericide composition from a plant that provides for spores. Clearly one of skill would have expected successful results with the bactericide of EP-894 because in a food container spores produced by the Stevia would have been expected to competitively inhibit any other spore production from spore forming bacteria or koji mold. The spore producers of the Stevia plant are mold as well and the yeast existing in the Stevia plant tissue would have been expected to produce enough spores for which to inhibit other molds from producing any, including koji molds.

Further, the art clearly recognizes that the enzymes are known and can release pectin from the plant. To select for protopectinase F, S, L, T, C or N is clearly within the skill of an ordinary artisan. Further to optimize temperature and pH for enzyme extraction is also within the purview of an artisan. Clearly one of skill would have been

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motivated by the teachings of the cited prior art combination to optimize pH and temperature in the processes of the cited prior art to produce antibacterial substances. The claims are prima facie obvious over the cited prior art combination.

Applicant's arguments filed March 24, 2005 and May 3, 2005, have been fully considered but they are not persuasive to remove the cited art of record, although a new combination of the same prior art and an additional references have been applied against the claims. With respect to arguments regarding inhibition of spore germination Sato et al has been set forth to show that Stevia can provide germination of spores. Further, competitive inhibition supported by the yeast spores would have been expected to prevent spore forming bacteria and koji mold sporulation. Thus, in this case vegetative cells would not be inhibited because the antibacterial substance derived from Stevia plant tissue itself does not inhibit the spores.

Furthermore, Sakai et al specifically teach that protopectinases has potent activity upon plant tissue and to replace solvent extraction with enzyme extraction or degradation for providing an antibacterial substance is well within the teachings of the cited prior art. The '135 and '382 patents clearly teach the desire to produce bacteriocidal compounds from plant tissue via methods of extraction and enzyme extraction is a normal method employed by those of skill in the art. One of skill in the art would have expected successful results using protopectinases as disclosed by Sakai et al.

To combine the cited references is clearly prima facie obvious. The combination would have been logical since the enzyme, protopectinase, is disclosed to be useful for

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degrading plant tissue. The motivation to combine the references lies in the fact that each reference discloses plant tissue for which extraction or disintegration is desired, therefore. The '382 patent clearly teaches adding the bacteriocide to food, including beverages (i.e. soft drink). Note col. 3, line 56. Applicants arguments directed to specific teachings of the instant specification, notably as set forth on page 12, all lines of Applicants' March 24, 2005, reply, are noted, however, the claims do not require any of these limitations and do indeed continue to read on the claimed subject matter.

Also, in response to applicant's argument that there is no suggestion or motivation to combine the patents with Saika et al and the citation of In re Regel et al is noted, but the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Further, with respect to a reference being silent with respect to antibacterial activity of pectin, this property is intrinsic to pectin and it should be noted that Applicants' claimed subject matter does not clearly identify pectin as having antibacterial activity; and the enzyme need only be capable of acting on protopectin to release a pectin substance so the claims do not actually require the presence of pectin in the claimed antibacterial substance.

The results in the declaration set forth by Mr. Sakai under 37 CFR 1.132, are noted. However, a product by process does not necessarily define and distinguish from a product of the prior art based on how it is made or its mechanism of inhibition. The results obtained and demonstrated in the declaration using an onion are recognized to

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be successful for onion but no comparison or results were conducted for the prior art plant species Stevia, of which is taught by the prior art of record and applied against the claims. Sato et al clearly teach that spores are formed indirectly from Stevia and would have been expected to provide percent inhibition of other spores formers in amounts relative to what Applicants' have obtained.

Therefore, for these reasons noted above and those of record, the claims are prima facie obvious over the cited prior art.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah K. Ware whose telephone number is 571-272-0924. The examiner can normally be reached on 9:30-6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Deborah K. Ware
June 25, 2005


DAVID M. NAFF
PRIMARY EXAMINER
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